

Remarks

This is in response to the Office Action dated December 18, 2006. The Office Action rejected claims 25 and 26 under 35 U.S.C. §112, second paragraph as lacking sufficient antecedent basis. The Office Action also rejected claims 1-27 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,985,928 ("Zhang"). This Amendment is filed concurrent with a Request for Continued Examination under 37 CFR §1.114.

I. Rejections under 35 U.S.C. §112

Claims 25 and 26 stand rejected under 35 U.S.C. §112, second paragraph as lacking sufficient antecedent basis for the limitation "the slot(s) size." Accordingly, Applicants have amended claims 25 and 26 to recite "a size of the slot." Applicants respectfully request the Examiner withdraw this rejection in view of the current amendments.

II. Rejections under 35 U.S.C. §102(e)

Claims 1-27 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,985,928 ("Zhang"). Applicants respectfully traverse these rejections. However, solely to expedite prosecution, Applicants have amended claims 1, 2, 6, 11, 16, and 18 to make explicit what was implicit in the claims. These amendments do not narrow the scope of the claims, but are made to make clear to the Examiner that which Applicants regard as the invention. No new matter has been added by these amendments.

In order for a claim to be anticipated under 35 U.S.C. §102, **each and every** limitation of the claim must be found either expressly or inherently in a single prior art reference. *PIN/NIP, Inc. v. Platte Chem. Co.*, 304 F.3d 1235, 1243 (Fed. Cir. 2002). In the present case, Zhang does not show each and every limitation of claims 1-27. Therefore, applicants request the withdrawal of the rejection under 35 U.S.C. §102(e).

With respect to claims 1-15 and 21-26, Applicants respectfully submit the rejection of independent claims 1 and 11 and their dependent claims is based on an erroneous characterization of Zhang and Zhang does not teach or disclose the features of the present invention as they are actually claimed. Applicants have only amended claims 1, 2, 6, and 11 to clarify these features and highlight the differences between the present claims and the prior art.

Amended independent claim 1 recites, among other things, "assigning one or more storage slots to each node in the peer-to-peer network, a first portion of the storage slots allocated for hosting storage zones and any remaining storage slots at each node allocated as a free slot reserve storage slot." Support for this amendment may be found in Applicants' Specification at least at Paragraphs [0013] and [0017]. Independent claim 11 recites similar features.

The current Office Action states that this claim feature is shown in Zhang at least at col. 2, lines 27-42, col. 3, line 47-col. 4, line 54, "p2p system consisting of nodes being in storage zones" (Office Action, Page 3, Para. 1). As Applicants have stated in prior response, even if Zhang shows "p2p system consisting of nodes being in storage zones," this is NOT what is claimed by Applicants. Rather, Applicants claim a method in which zones are hosted IN slots, where the slots are IN nodes. See, for example, Applicants' Specification at least at Paragraphs [0004], [0013], [0017], and [0022] and FIGS. 1 and 2 and discussion in the next paragraph. The rejection of claims 1-27 is therefore improper as the Office Action has not addressed Applicants' claims as actually written (either before or after amendment of the same).

The current Office Action also maintains the rejections of independent claims 1 and 11, stating "the features upon which applicant relies (i.e., placing storage zones within a node) are not recited in the rejected claim(s)." Contrary to this assertion, the instant application does claim storage zones hosted in nodes. Since the storage zones are in the slots and the slots are in the nodes, then the storage zones are in the nodes. Therefore, Applicants maintain the arguments as previously presented, namely "that at least one particular salient distinction

between Zhang and the present invention was misconstrued; Zhang does not teach, suggest, or disclose placing storage zones within a node" and "the claims of the present invention are directed to storage zones within a node and not to storage zones containing nodes (Amendment and Response of 9/18/06, Page 13, lines 9-14). It is unclear to Applicants how, since Zhang describes a wholly different structure, the prior arguments of Applicants are not found persuasive.

Further, Zhang is directed to peer-to-peer system based on a zoom-in algorithm wherein the zoom-in algorithm groups nodes into zones, where the nodes contain objects. Specifically, "[a] zone (i.e. a parent zone 210) where a parent object (e.g., hosted by node 110a) lives is identified" (Zhang, Col. 3, lines 55-56). See also FIGS. 2A and 2B. Thus, Zhang discusses and identifies a node having objects (similar to Applicants' claims, but absent the storage slots and storage zones) but the zones of Zhang are different from the present invention in that Zhang's zones are groupings of nodes, not structures within the nodes. Therefore, Zhang does not address the structure of the nodes for use in the methods of independent claims 1 and 11 as the present invention does.

The current Office Action also incorrectly states "Zhang's system is structurally the same as the zone would be divided into two subzones" (Office Action, section 6b). As shown above, Zhang's zones refer to a grouping of nodes in a peer-to-peer network, NOT to the actual structure of the nodes as in Applicants' claims (e.g., "assigning one or more storage slots to each node in the peer-to-peer network, a first portion of the storage slots allocated for hosting storage zones and any remaining storage slots at each node allocated as a free slot reserve storage slot"). For clarity: though Zhang and the present invention both discuss "zones," these are not the same features in structure, form, use, or definition. They are different concepts, wherein the 'Zhang zones are described at least in the first sentence of Zhang's summary and Applicants' zones are described throughout the Specification, specifically in Paragraph [0013].

Still further, Claim 1 has also been amended to recite "converting a free slot reserve storage slot into a new storage zone." Support for this amendment may be found in Applicants' Specification at least at Paragraph [0004]. The

Office Action does not address the structure of a free slot reserve storage slot in Zhang as Zhang does not have this structure. As discussed above, Zhang is directed to a global system and does not address the structure of the nodes beyond stating that the nodes may have objects. Accordingly, as the free slot reserve storage slot is absent from Zhang and unaddressed by the Office Action, the method steps of "converting a free slot reserve storage slot into a new storage zone" and "transferring the second portion of the data to the new storage zone," as claimed in Applicants' amended independent claims 1 and 11 are not met by the prior art.

Dependent claims 6 and 21-24 are amended to bring the claim language in line with amended independent claims 1 and 11. The particular inventive features of claim 2 are discussed further below with respect to amended independent claim 16. Though dependent claim 2 does not depend from independent claim 16, claim 2 recites features similar to those recited in claim 16, specifically "each node is assigned more storage slots than its actual physical capacity allows."

Zhang does not teach or suggest all claim features of independent claims 1 and 11. Dependent claims 2-10, 12-15, and 21-16 depend from these claims and therefore inherit the features not shown by Zhang. Accordingly, Applicants respectfully request the Examiner reconsider and withdraw these rejections.

With respect to independent claim 16, Applicants have amended the claim to more clearly recite:

A node for a peer-to-peer network, the node assigned a number of slots for storage of objects in the peer-to-peer network where a capacity of the number of slots exceeds actual physical storage capacity of the node.

Support for this amendment may be found in Applicants' Specification at least at Paragraphs [0005], [0017] and [0022]. Specifically, the concept of oversubscription in claim 16 is discussed, wherein "[e]ach node would have a number of actual slots which amount to its actual physical capacity and a number of 'virtual slots'" and "[t]he physical nodes preferably arrange their storage capacity in what the inventors refer to as a number of slots whose number can

be roughly proportional to the amount of storage available to the physical node." Each slot has a *SlotSize*, where "*SlotSize* is a system-wide constant representing the limit size to which a zone can grow before it fills the slot." As seen here, the *SlotSize* is the filling point of the slot (e.g., the capacity of the slot). Since the node may have "a number of actual slots which amount to its actual physical capacity and a number of 'virtual slots' and each slot has a capacity *SlotSize*, the total capacity of the actual slots and the virtual slots will exceed the capacity of the node (e.g., the capacity total if only the actual slots are considered). An example of this is described in Paragraph [0022] and shown in FIG. 2.

The current Office Action points to Zhang, Col. 4, line 39-Col. 5, line 34 and the generic "storage utilization" to show the features of claim 16. However, this section of Zhang and the generic idea of "storage utilization" do not address the features of claim 16. Specifically, Zhang does not disclose slots storing objects within a node as in "the node assigned a number of slots for storage of objects." Again, see Zhang's FIGS. 2A and 2B, which shows objects in nodes in 'Zhang zones', but does not show storage slots. Further, this section of Zhang only discusses determining a storage utilization. Specifically, Zhang states, "For example, the node 110b may periodically compute storage utilization, using known techniques, and store it in memory. The storage utilization includes the memory capacity being used to store objects in a node at a given time." (Zhang, Col 5, lines 15-19). Zhang, neither in the section cited by the Office Action nor anywhere else, discloses "where a capacity of the number of slots exceeds actual physical storage capacity of the node" as recited in amended claim 16.

Therefore, as Zhang fails to teach or suggest all claim features of Applicants' independent claim 16, the rejection is improper and should be withdrawn.

Further, the Office Action also maintains the rejection of claim 16, stating "Zhang teaches the 'slots' and allocating more storage slots than its actual physical storage capacity as Zhang teaches the storage capacity and utilization may be over 80% (see col. 5, lines 11-23), and as seen from the specification of the current invention that over a 50% utilization results in the oversubscription

desired of the invention (see par.23)." See, Office Action, Section 6d. First, as discussed above, Zhang does not teach or suggest a slot and therefore cannot teach allocating more storage slots than its actual physical storage capacity. Second, the Office Action mischaracterizes Applicants' Specification, specifically Paragraph [0023]. Paragraph [0023] discloses "Oversubscription advantageously allows the achievement of utilizations higher than 50%." As one of skill in the art will recognize, *allowing* achievement of utilizations higher than 50% is not the same as stating that "over a 50% utilization *results* in the oversubscription desired of the invention." (emphasis added). As discussed above, oversubscription is detailed in Applicants' Specification at least at Paragraphs [0005], [0017] and [0022] and refers to having a node with a number of real slots and a number of virtual slots in a node, such that the total capacity of the real plus virtual slots is greater than the actual capacity of the node. In this way, the node is oversubscribed.

Dependent claim 18 is amended to bring the claim language in line with amended independent claim 16. These amendments are not meant to limit the scope of the claims.

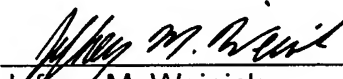
Zhang does not teach or suggest all claim features of independent claim 16. Dependent claims 17-20 depend from this claim and therefore inherit the features not shown by Zhang. Accordingly, Applicants respectfully request the Examiner reconsider and withdraw these rejections.

III. Conclusion

For the reasons discussed above, the presently pending claims are patentable over the prior art. Further, these claims are presented in proper form for allowance. For these reasons, Applicants request withdrawal of the §112 and §102(e) rejections.

Reconsideration and allowance of all claims is respectfully requested.

Respectfully submitted,



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